User Manual

Thermo Scientific Orion

Orion Star Com Software Program

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Thermo SCIENTIFIC

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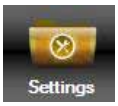
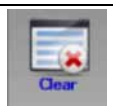
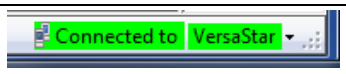
CHAPTER 1 Introduction

Thermo Scientific™ Orion™ Star Com communication software is compatible with Thermo Scientific™ Orion™ VERSA STAR™ meters, Thermo Scientific™ Orion™ Star™ A200 series meters and Orion Star A300 series meters.

Star Com software facilitates the transfer of calibration and measurement data from the meter to a computer and then allows data to be exported to an Microsoft Excel® (.xls) or Comma-Separated Values (.csv) file. Transferred data can also be printed from the computer.

Star Com Functions

Icon	Function
	Live Data Collect new measurement data using Star Com program
	Saved Data Collect stored measurement data from the meter data log, includes options for transferring all data or a range of data
	Calibration Collect stored calibration data from the meter calibration log
	History Location where Live Data measurements are stored Each time Live Data is collected using the Start icon, it is stored as a session if the Record icon is checked
	Settings Set the computer communication port location, set the meter baud rate, enter the time interval for timed measurements taken in the Live Data mode, and lock (checked) or unlock (unchecked) the meter keypad
	Login / Logout Create a program administrator and enter up to 25 user names and passwords to limit access to specific saved Star Com data
	Record Select if a session will be saved (checked) or not saved (unchecked) in the History location when Live Data measurements are taken using the Start icon
	Start / Pause Press the Start icon to take a Live Data measurement, includes options for taking a single or series of timed measurements Press the Pause icon to stop a Live Data measurement
	Clear Press to erase measurements shown in Live Data, will not erase sessions stored in the History location
	Print Send contents of Live Data, Saved Data, Calibration or History to a printer connected with the computer
	Export Save contents of Live Data, Saved Data, Calibration or History as an Excel or Comma-Separated Values file on the computer
	Status Indicator Bar Shows the connection status of the meter to Star Com
	Channel Bar Display the content of selected meter channel(s) in Live Data, Saved Data or History

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CHAPTER 2 # Software Installation Instructions

Orion Star Com Software Installation

Prerequisites

- VERSA STAR meters must be at software revision 2.73 or higher to use the Star Com software. If using the meter USB port to connect with the computer, the VERSA STAR USB Driver software must be installed on the computer.
- Star A200 and Star A300 series meters must be at software revision 2.59 or higher to use the Star Com software. If using the meter USB port to connect with the computer, the Star A USB Driver software must be installed on the computer.
- The computer must have .NET 4.0 Framework installed. To download the latest version, go to www.microsoft.com/net.
- The date and time format must be the same for the meter and computer.

The operator must have administrative privileges to run Star Com software on Windows 7.

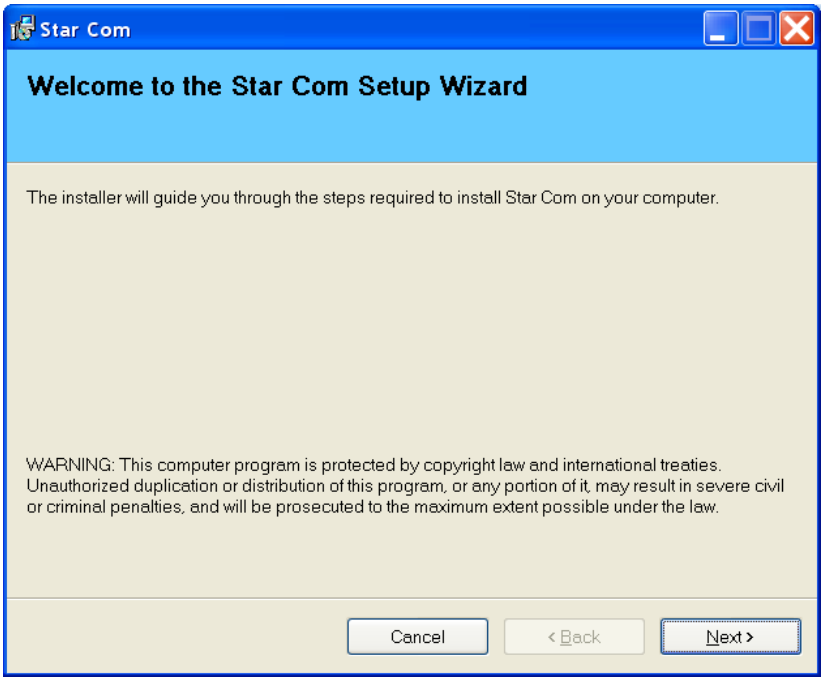
In the Windows® 7 operating system, exporting the data to Excel will prompt a warning. Click Yes to open the file.

When the data log reaches the maximum limit in the meter, the “DataLog is full” meter warning will be displayed and the meter will stop responding. Restart the Star Com program to continue.

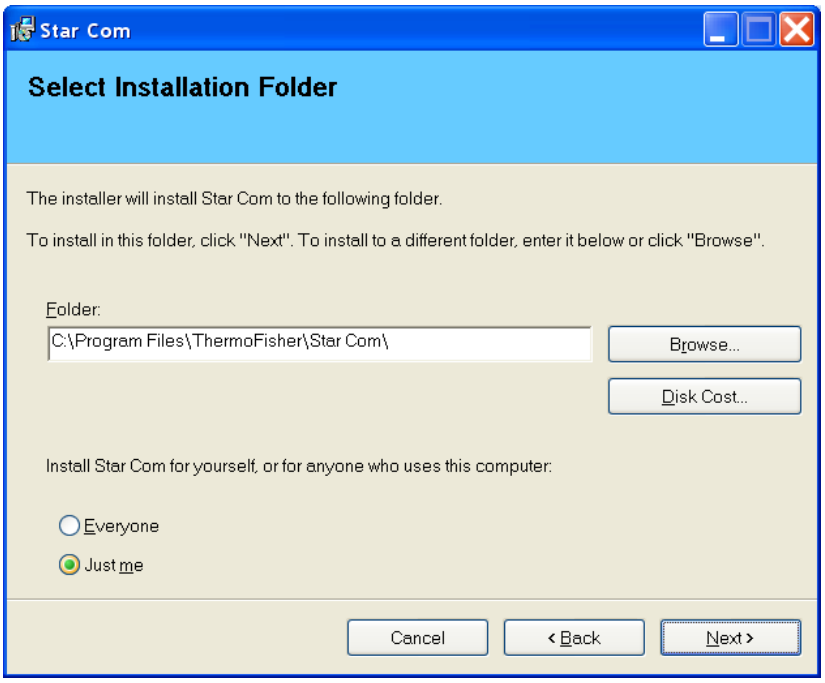
Installing Star Com Software

Download the latest Star Com software file at www.thermoscientific.com/WAI-Library.

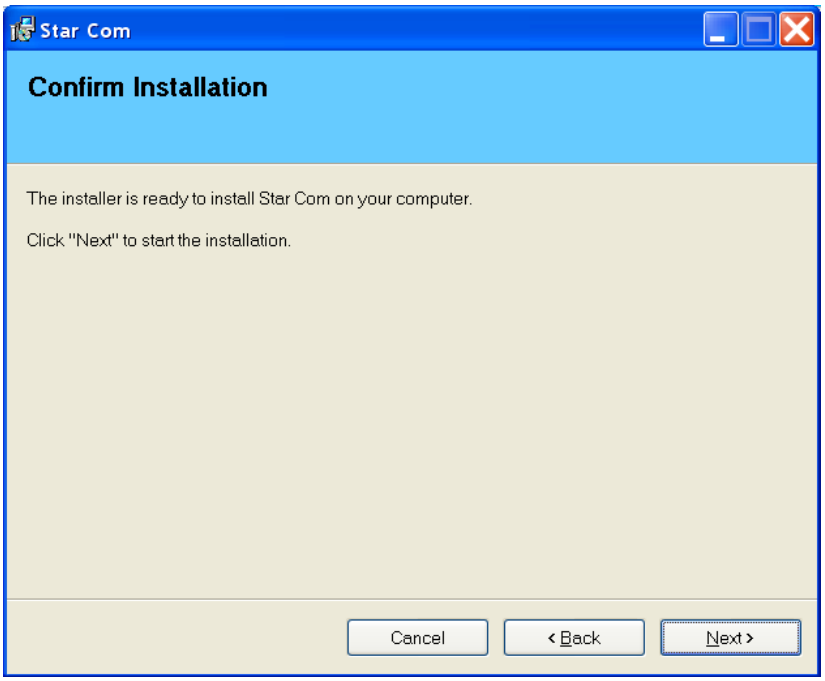
1. Double click the Star Com.msi file. This will open the Welcome page of the installer.
2. The following message should appear. Click the Next button.



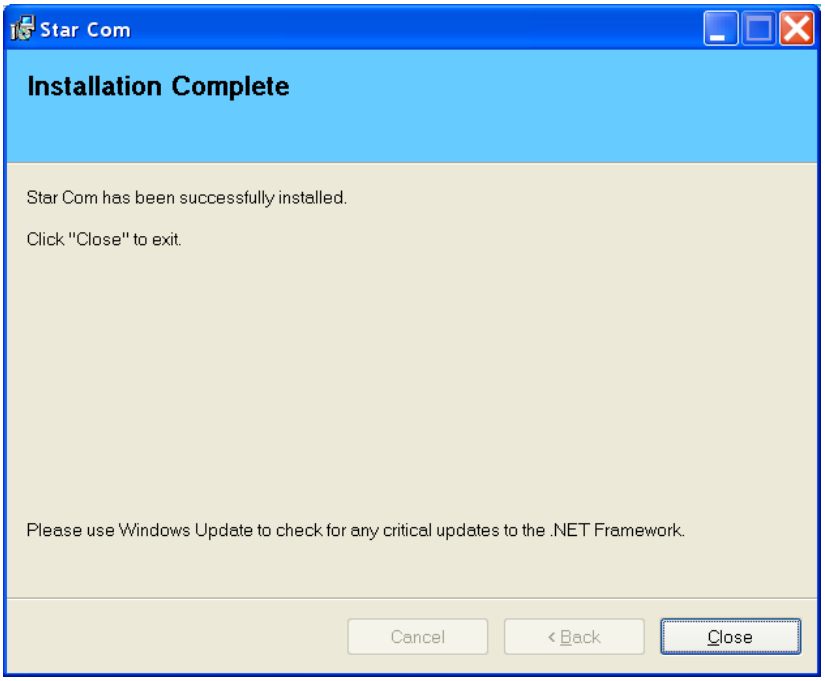
3. Select the location of the installation folder and then click the Next button.



4. Start the installation by clicking the Next button.



5. Wait while the software is being installed. When the message box confirms that the software has been successfully installed, click the Close button.



6. The Star Com icon should now be available on the desktop. Double click the Star Com icon to launch the software program.

Orion VERSA STAR Meter Software Upgrade

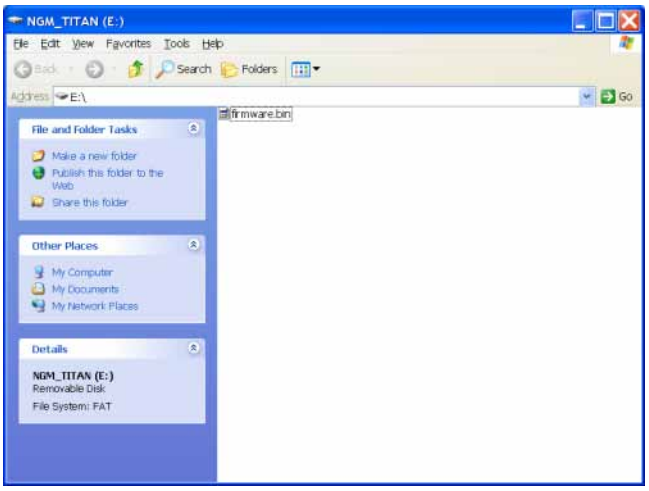
Installing VERSA STAR Software

VERSA STAR meters must be at software revision 2.73 or higher to use the Star Com software.

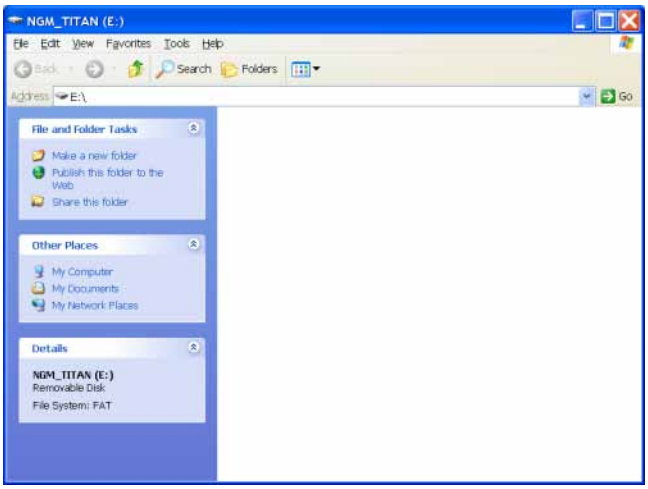
Note: Back up any stored data in the meter before upgrading the software.

1. Download the latest software file for VERSA STAR meters at www.thermoscientific.com/WAI-Library or www.thermoscientific.com/water and unzip the software file to the computer's desktop.
2. Disconnect the power adapter from the meter.
3. Connect the USB cable (included with meter) to the Mini B USB input on the meter and USB input on the computer.

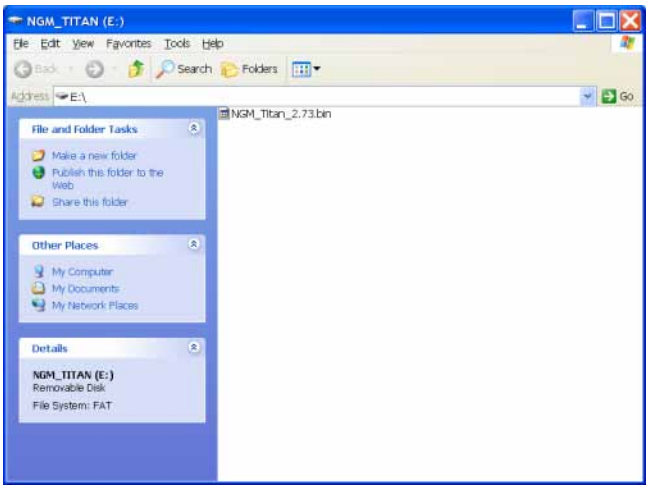
4. Press and hold the **f1** key on the meter keypad while connecting the power adapter to the meter.
5. After about five seconds, a Removable Disk window (i.e. E:\) will open on the computer. Release the **f1** key.
    a. Note that the meter display will not turn on.
    b. If using Windows 7, a Removable Disk window will not open automatically. Go to the Start Menu, select My Computer, locate the Removable Disk and double click to open.



6. Delete the file in the Removable Disk window.



7. Transfer the new software file to the Removable Disk window and wait for the file to transfer completely.



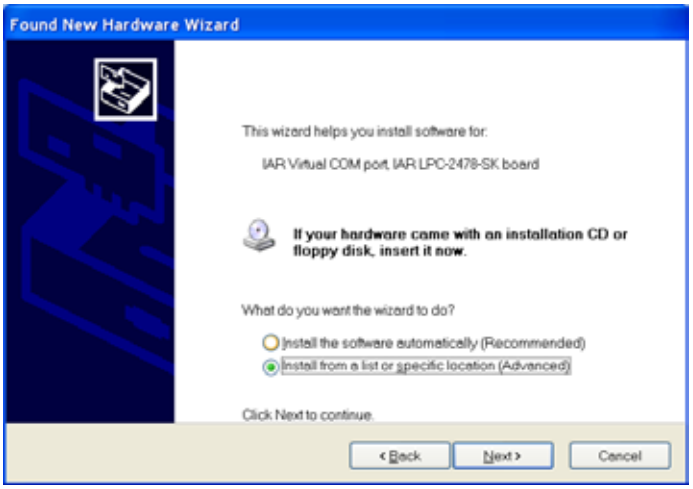
8. Disconnect the power adapter and USB cable from the meter.
9. Connect the power adapter to the meter.
10. Wait for the meter to load the software update. Ensure uninterrupted power throughout the update process. If needed, the meter will automatically update the module software.

Installing VERSA STAR USB Driver for Computer Data Transfer

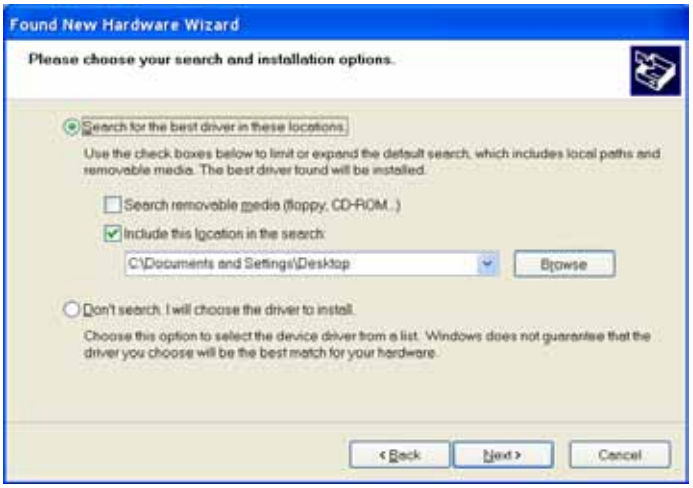
Note: Installation of this driver is required to transfer data from a VERSA STAR meter to a computer via the USB port. The driver is not required to update the meter software.

1. Download the driver file at www.thermoscientific.com/WAI-Library or www.thermoscientific.com/water and unzip the file to the computer desktop. The driver file can also be downloaded from the VERSA STAR Literature CD (included with meter) and saved to the computer desktop.
2. Connect the power adapter to the meter and power on the VERSA STAR meter.
3. Connect the USB cable (included with meter) to the Mini B USB input on the meter and then connect the cable to the USB input on the computer.
4. The Found New Hardware Wizard window will open. Select “No, not this time” and click the Next button.

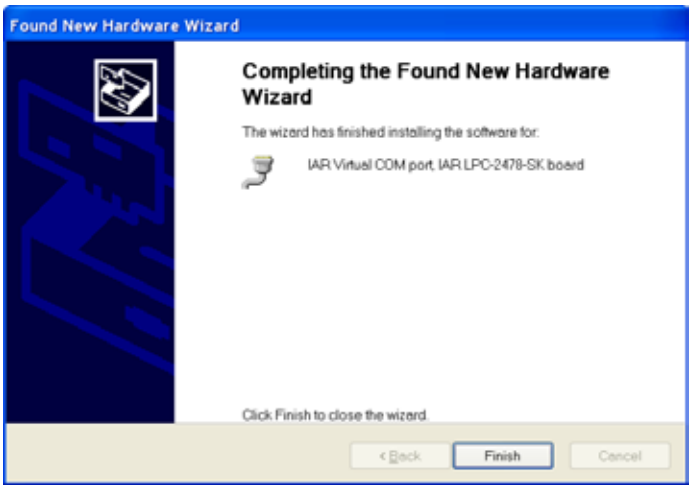
5. Select “Install from a list or specific location (Advanced)” and click the Next button.



6. Select “Search for the best driver in these locations” and check the box next to the “Include this location in the search:” option. Click the Browse button and set the computer desktop as the location. Click the Next button.

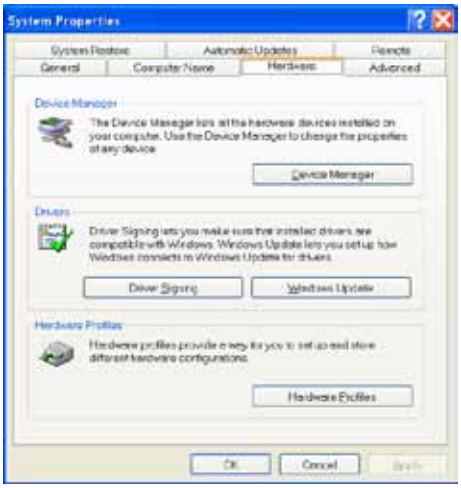


7. Wait while the driver is loaded and accept any warning messages. Once the installation is complete, click the Finish button

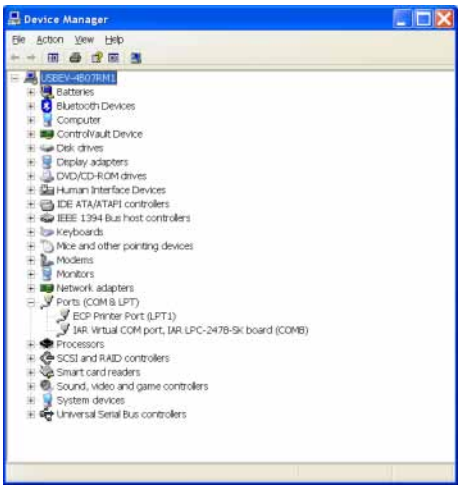


8. Set the VERSA STAR meter setup parameters to allow transferring data from the meter to the computer via the USB drive.
    a. On the meter in the measurement mode, press the f3 (setup) key.
    b. Press the arrow keys to select Instrument Settings. Press the f3 (select) key.
    c. Press the arrow keys to select Communication. Press the arrow keys to select USB.
    d. Press the f2 (page 2) key.
    e. Press the arrow keys to select Printing. Press the arrow keys to select On.
    f. Press the arrow keys to select Print Format. Press the arrow keys to select CSV (comma delimited text) or Printer (standard text).
    g. Press the f2 (page 1) key and press the f1 (back) key until the meter returns to the measurement mode.

9. Review the COM port location and settings. On the computer, open the Start Menu, right-click My Computer and select Properties. The System Properties window will open. Select the Hardware tab and click the Device Manager button.



10. The Device Manager window will open. Expand the Ports option and double click the "IAR Virtual COM port, IAR LPC-2478-SK board (COM)" option.



11. The IAR Virtual COM port, IAR LPC-2478-SK board (COM) Property window will open. Select the Port Settings tab and make sure the communication settings are:

Bits per second:	115200
Data bits:	8
Parity:	None
Stop bits:	1
Flow control:	None

12. The Orion VERSA STAR meter is now able to transfer data to the computer using the virtual COM port and Star Com, HyperTerminal or similar program.

Orion Star A200 and Star A300 Series Meter Software Upgrade

Installing Star A Meter Software

Star A200 / A300 meters must have software revision 2.59 or higher to use Star Com software.

Note: Back up any data stored in the meter before upgrading the software.

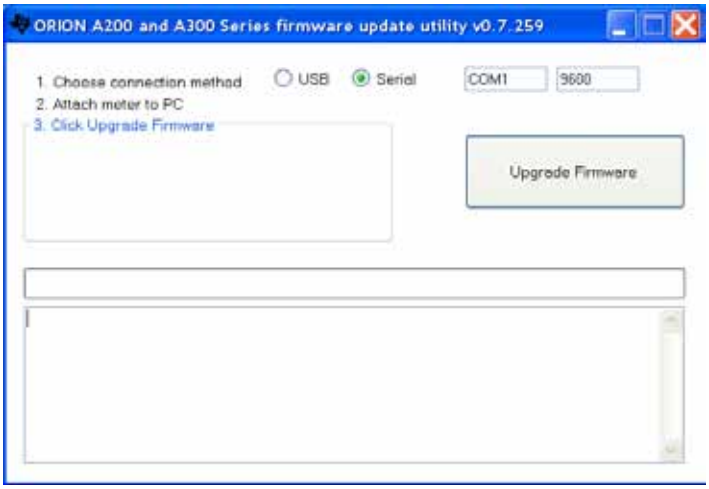
1. Download the latest software file for Star A200 and Star A300 series meters at www.thermoscientific.com/WAI-Library or www.thermoscientific.com/water and unzip the software file to the computer's desktop.
2. Connect the RS232 cable (Cat. No. 1010053) to the meter and computer.
    a. If using an RS232 to USB adapter, refer to the Using the RS232 to USB Adapter instructions.
3. Power on the meter. To ensure uninterrupted power throughout the update process, use the universal power adapter for benchtop meters and new batteries or the universal power adapter for portable meters.
4. Double click the software upgrade program (.exe) to install the software upgrade file onto the computer. The program icon will look similar to the one below.

5. Follow all prompts, including reviewing and accepting the licensing agreement.

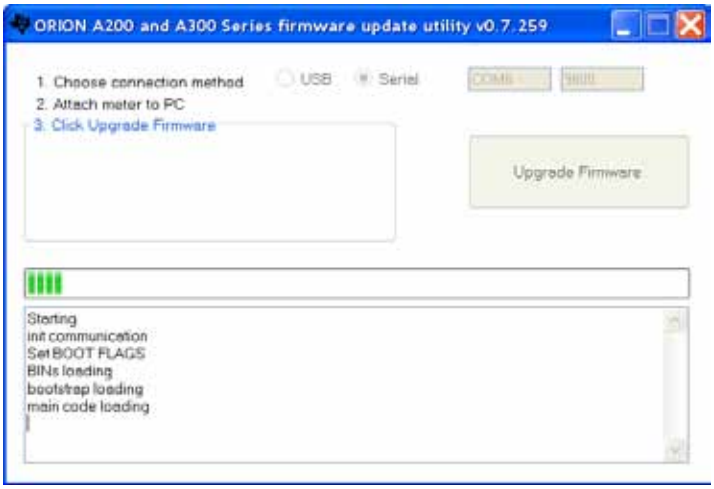
6. After successful installation of the software upgrade program, a new software upgrade file icon will appear on the computer's desktop. Double click the new software upgrade file icon to launch the program. The program icon will look similar to the one below.

7. Follow all prompts, including reviewing and accepting the licensing agreement.

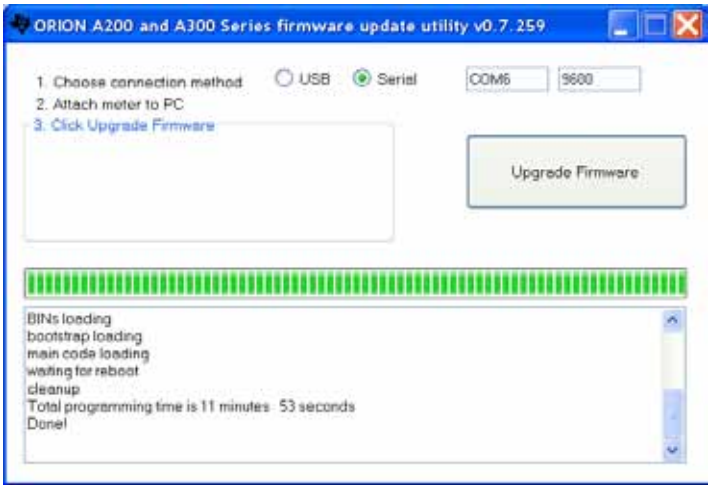
8. Select “Serial” as the connection method. Enter the communications port (i.e. COM1) that the RS232 cable is connected to on the computer. Ensure the baud rate of the meter is set to 9600 or enter the baud rate to match the meter baud rate setting.



9. Click the “Upgrade Firmware” button.



10. The update will take approximately 10 to 15 minutes. Once the software update is complete, the dialog box will show “Done!”



11. Detach the RS232 cable from the meter and computer. Close the software update.

Using the RS232 to USB Adapter

When using an RS232 to USB adapter, drivers for the adapter may need to be downloaded from the manufacturer website before the adapter can be used for software uploads.

1. For example, when using a Tripp Lite adapter, go to http://www.tripplite.com/en/support/downloads/software-literature-downloads.cfm and enter the model number shown on the adapter cable (i.e. U209-000-R).
2. Select the appropriate drivers for the computer operating system. For example, if using Windows XP select the U209-000-R Windows Drivers.
3. Open and extract the files to a suitable computer location, for example C:\Drivers.
4. Plug the cable and adapter into the computer and follow the prompts to install the adapter software and drivers.
5. To determine the COM port location of the cable and adapter:
    a. On the computer, open the Start Menu, right-click My Computer and select Properties.
    b. The System Properties window will open. Select the Hardware tab and click the Device Manager button.
    c. The Device Manager window will open.
    d. Expand the Ports option and record the COM port the meter is connected to.

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CHAPTER 3 Orion Star Com Instructions

Thermo Scientific Orion Star Com communication software is compatible with Orion VERSA STAR Meters, Orion Star A200 series meters and Orion Star A300 series meters.

- VERSA STAR meters must be at software revision 2.73 or higher to use the Star Com software. If using the meter USB port to connect with the computer, the VERSA STAR USB Driver software must be installed on the computer.
- Star A200 and Star A300 series meters must be at software revision 2.59 or higher to use the Star Com software. If using the meter USB port to connect with the computer, the Star A USB Driver software must be installed on the computer.

Star Com software facilitates the transfer of calibration and measurement data from the meter to a computer and then allows data to be exported to an Excel (.xls) or Comma-Separated Values (.csv) file. Transferred data can also be printed from the computer.

Star Com software also includes basic live data collection of a single measurement or a series of timed measurements that can be viewed as a table or graph.

VERSA STAR Meter and Star Com Interfacing

1. Power on the meter and connect the meter to the computer using the RS232 or USB computer cable.
2. Verify the meter has software revision 2.73 or higher. To view the current software revision, access the meter Setup Menu, select Diagnostics, select About Meter and the meter will display the software revision of the meter and any connected modules.
    a. The computer must have the VERSA STAR driver installed to use the USB cable to interface the meter and computer.
3. Verify the meter export data function is on.
    a. In the measurement mode, press the setup key.
    b. Use the arrow keys to select Instrument Settings and press the f3 (select) key.
    c. Use the up/down arrow keys to select Communication and use the left/right arrow keys to set the computer connection to USB or RS232, depending on which cable was used to interface the meter with the computer.
    d. Use the up/down arrow keys to select Printing and use the left/right arrow keys to select On.
    e. Press the measure key to return to the measure mode.
4. Open the Star Com program.
5. Determine the RS232 or USB COM port location:
    a. On the computer, open the Start Menu, right-click My Computer and select Properties.
    b. The System Properties window will open. Select the Hardware tab and click the Device Manager button.
    c. The Device Manager window will open. Expand the Ports option and record the COM port the meter is connected to.
6. Click the Star Com Settings icon. Update the COM port and baud rate fields, if needed, and save the settings. If any changes are made, click the Save icon and then exit the Settings menu.
7. Wait a few seconds and the Star Com program will show the updated connection status in the Status Indicator Bar on the bottom, right of the screen. The status should be green indicating that the meter is ready to transfer data to the computer.

Star A200 and Star A300 Series Meter and Star Com Interfacing

1. Power on the meter and connect it to the computer using the RS232 computer cable.
2. Verify the meter has software revision 2.59 or higher. To view the current software revision, access the meter Setup Menu, select Diagnostics, select About Meter and the meter will display the model, serial number and software revision.
3. Verify the meter export data function is on.
    a. In the measurement mode, press the setup key.
    b. Use the arrow keys to select Settings and press the f3 (select) key.
    c. Use the arrow keys to select Export Data and press the f3 (select) key.
    d. Use the arrow keys to select Printing and press the f3 (select) key. Use the arrow keys to select On and press the f3 (select) key.
    e. Press the measure key to return to the measure mode.
4. Open the Star Com program.
5. Determine the RS232 COM port location:
    a. On the computer, open the Start Menu, right-click My Computer and select Properties.
    b. The System Properties window will open. Select the Hardware tab and click the Device Manager button.
    c. The Device Manager window will open. Expand the Ports option and record the COM port the meter is connected to.
6. Click the Star Com Settings icon. Update the COM port and baud rate fields, if needed, and save the settings. If any changes are made, click the Save icon and then exit the Settings menu.
7. Wait a few seconds and the Star Com program will show the updated connection status in the Status Indicator Bar on the bottom, right of the screen. The status should be green indicating that the meter is ready to transfer data to the computer.

Using the Live Data Function

Use the Live Data function to collect new measurement data using the Star Com program.

Saving Live Data and Creating Sessions

Check the Record icon to save Live Data measurements to the History location or uncheck the Record icon to not save Live Data measurements.

A session is created in the History location if the Record icon is checked and Live Data is collected. A new session is created every time the Start icon is pressed. Sessions can be viewed as graphs and statistics (minimum, maximum, mean and standard deviation) can be calculated for a set of common values. Sessions can also be sent to a printer connected with the computer, exported as an Excel (.xls) or Comma-Separated Values (.csv) file on the computer or deleted in the History location.

Keypad Lock

Pressing any meter key while taking a measurement in the Live Data function will cause a communication break between the meter and Star Com program.

If the Live Data function will be used to collect measurements from the meter, it is recommended that the operator prepare the meter by programming all required settings and then start and run the Star Com program with the Keypad Lock option enabled in the Star Com Settings location. To enable Keypad Lock option, click the Settings icon, check the box next to the Keypad Lock option and press the Save icon.

When finished using the Star Com program, disable the Keypad Lock option before closing the program and disconnecting the meter from the computer to terminal the keypad lock command. To disable the Keypad Lock option, click the Settings icon, uncheck the box next to the Keypad Lock option and press the Save icon.

If the meter settings need to be changed and the meter keypad does not respond, select the Star Com Settings icon and verify that Keypad Lock is unchecked. If required, uncheck the box and press the Save icon. The meter keypad should now respond to all key presses.

If the Star Com program is closed or the meter is disconnected from the computer and the meter keypad is still locked, disconnect and reconnected the power adapter from the meter to reset and disable the keypad lock.

Single Measurement Option

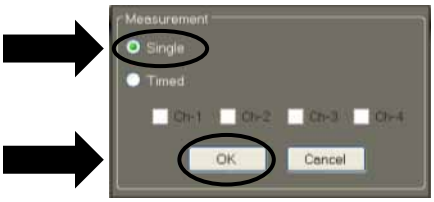
The single measurement option will prompt the meter to take a reading of the measurement mode and channel(s) actively shown on the meter display.

For single channel meters, make sure the desired measurement mode is selected (i.e. pH, mV, RmV or ORP) on the meter. For multiple channel meters, make sure the desired measurement mode is selected for each channel and all desired channels are shown on the meter display.

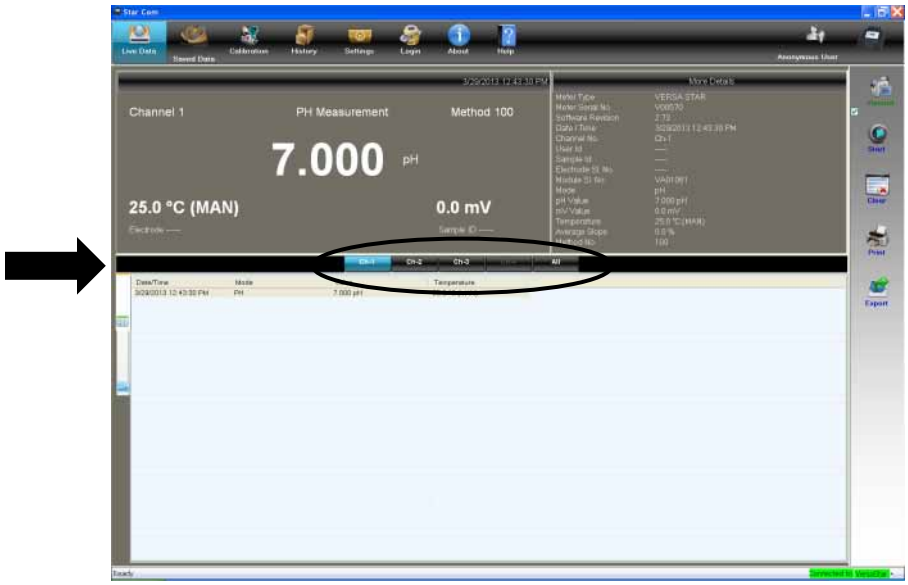
1. Press the Live Data icon.

2. Press the Start icon to begin taking the measurement.

3. Check the Single option and press OK.



4. Wait while the measurement data is collected. The Pause icon can be pressed to stop the measurement.
5. The measurement will be displayed by channel on the Star Com program. Press the channels on the Channel Bar to view data taken from a multiple channel meter.



6. Press the Graph icon to view multiple measurements as a graph.

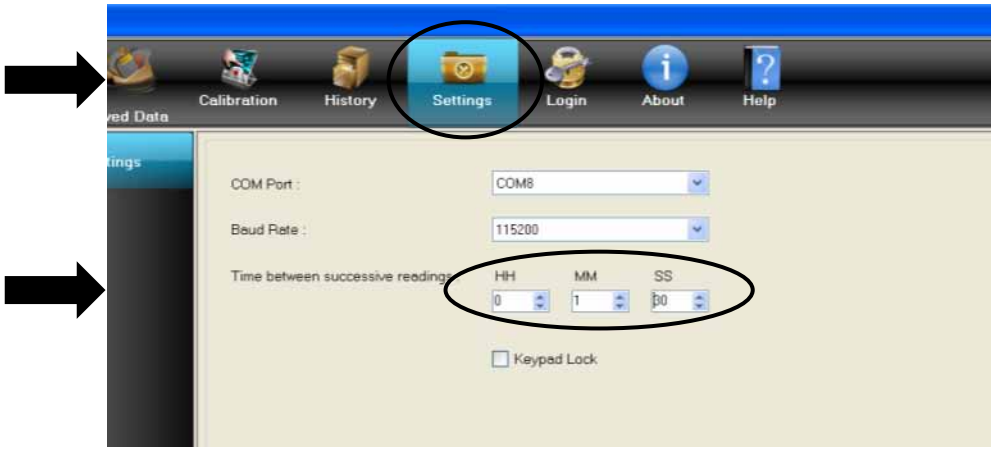
7. Press the Print icon to send the data to a printer connected with the computer or press the Export icon to save the data as an Excel (.xls) or Comma-Separated Values (.csv) file on the computer.

Timed Measurement Option

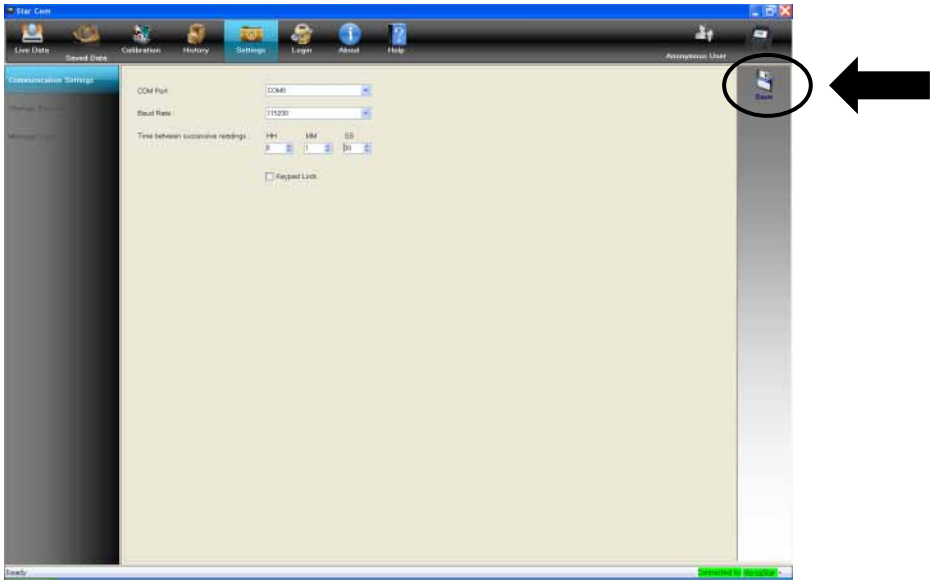
The timed measurement option will prompt the meter to take a series of readings at preset time intervals. The channels are selected by the operator prior to starting the timed measurement. The measurement mode of each channel is what is actively shown on the meter display.

For single channel meters, make sure the desired measurement mode is selected (i.e. pH, mV, RmV or ORP) on the meter. For multiple channel meters, make sure the desired measurement mode is selected for each channel on the meter.

1. Press the Settings icon and enter the hour, minute and second values in the Time between successive readings fields.

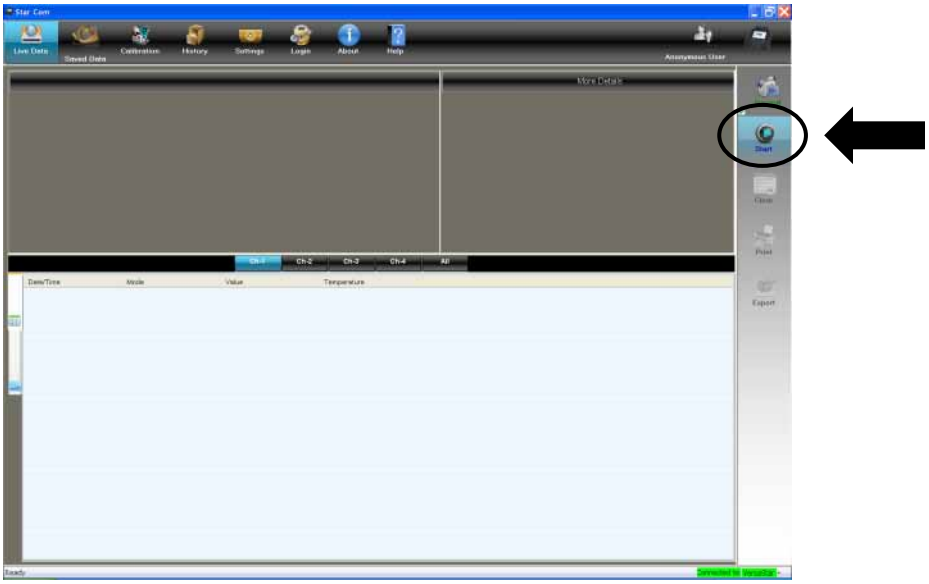


2. Press the Save icon to save the setting.

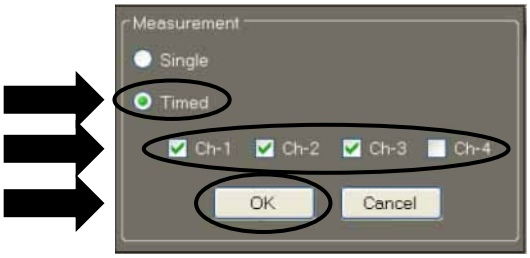


3. Press the Live Data icon.

4. Press the Start icon to begin taking the measurement.

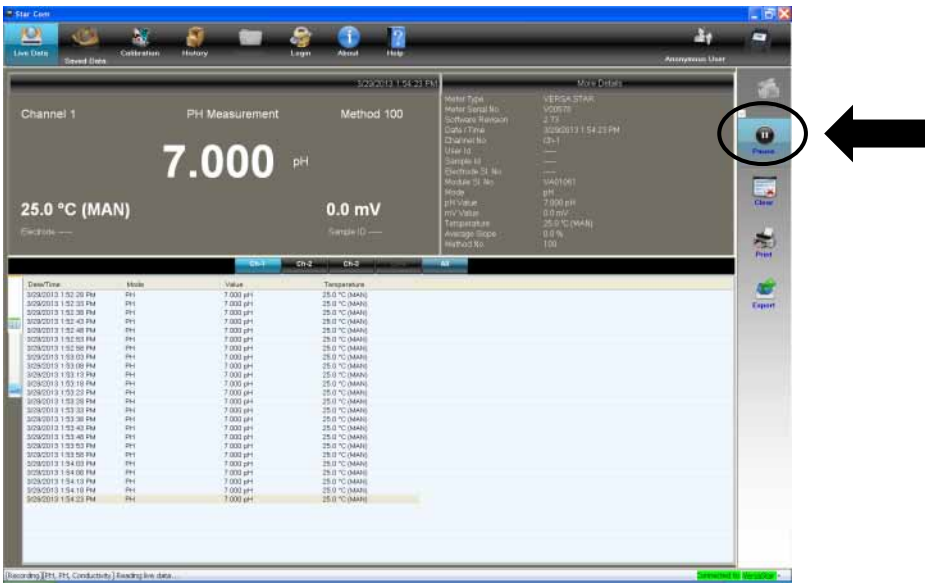


5. Check the Timed option, check the desired channel or channels and press OK.
    a. If using a VERSA STAR meter, make sure the modules are connected to the channels that are checked.

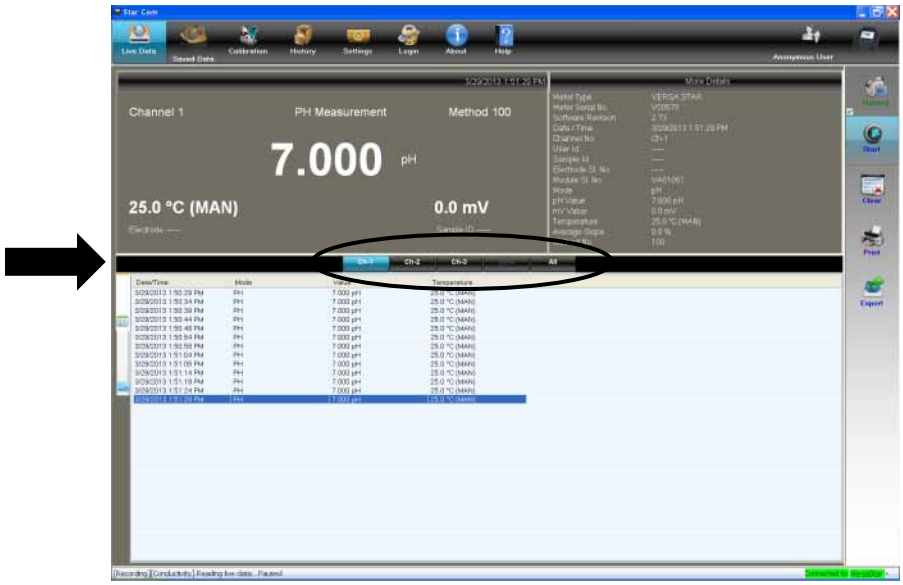


6. The measurement data will be collected at the set time intervals.

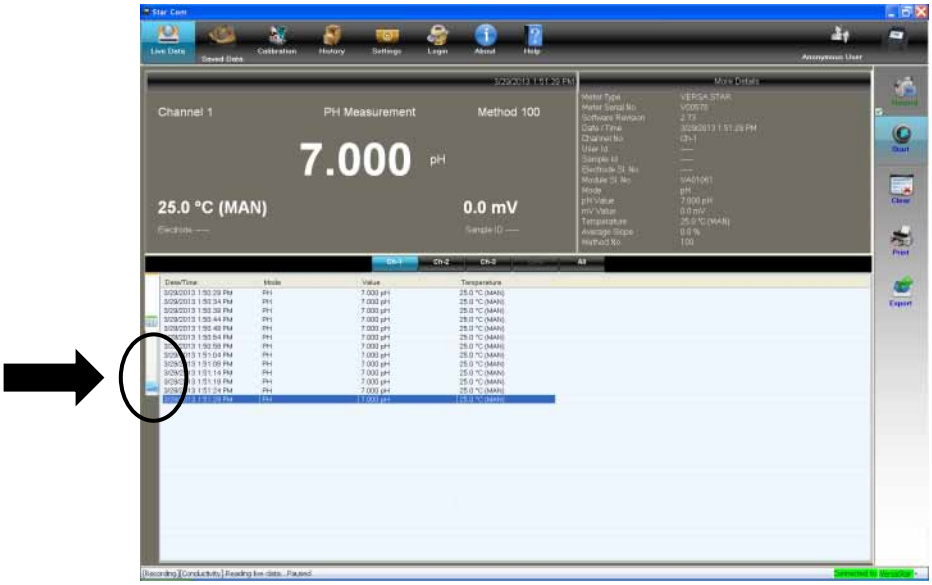
7. To stop taking timed measurements, press the Pause icon.



8. The measurements will be displayed by channel on the Star Com program. Press the channels on the Channel Bar to view data taken from a multiple channel meter.



9. Press the Graph icon to view multiple measurements as a graph.



10. Press the Print icon to send the data to a printer connected with the computer or press the Export icon to save the data as an Excel (.xls) or Comma-Separated Values (.csv) file on the computer.

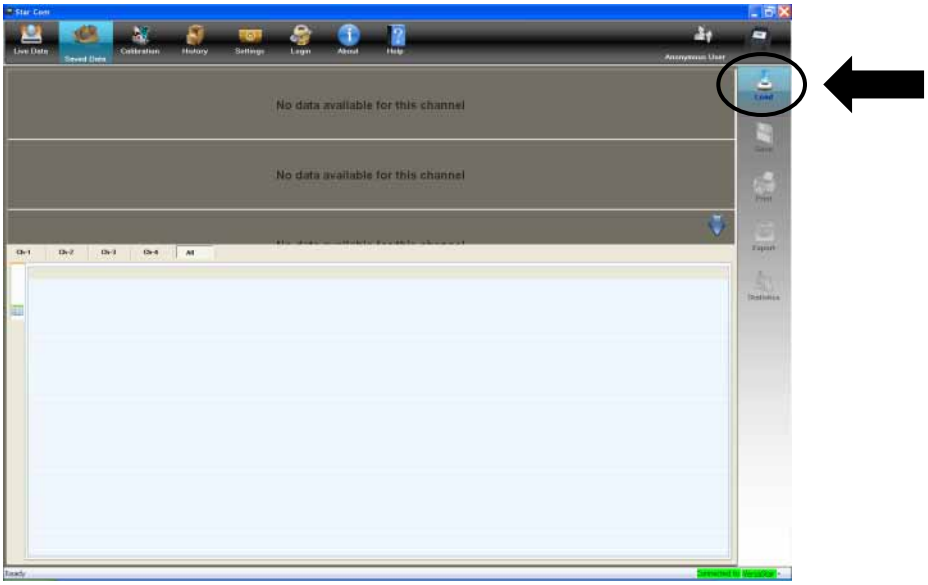
Using the Saved Data Function

Use the Saved Data function to collect stored measurement data from the meter data log.

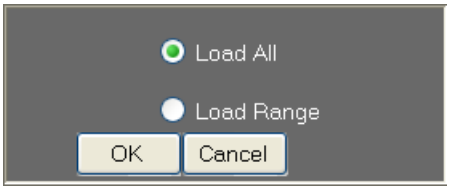
Collect all measurement data from the meter or a range of measurement data by data log number.

1. Press the Saved Data icon.

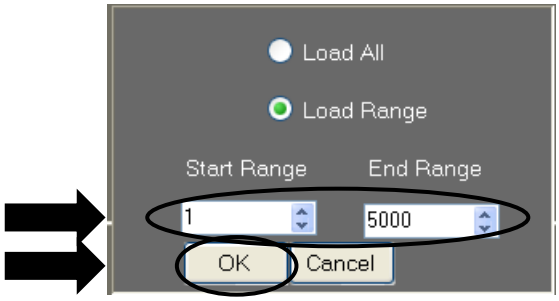
2. Press the Load icon.



3. Select the Load All or Load Range option.

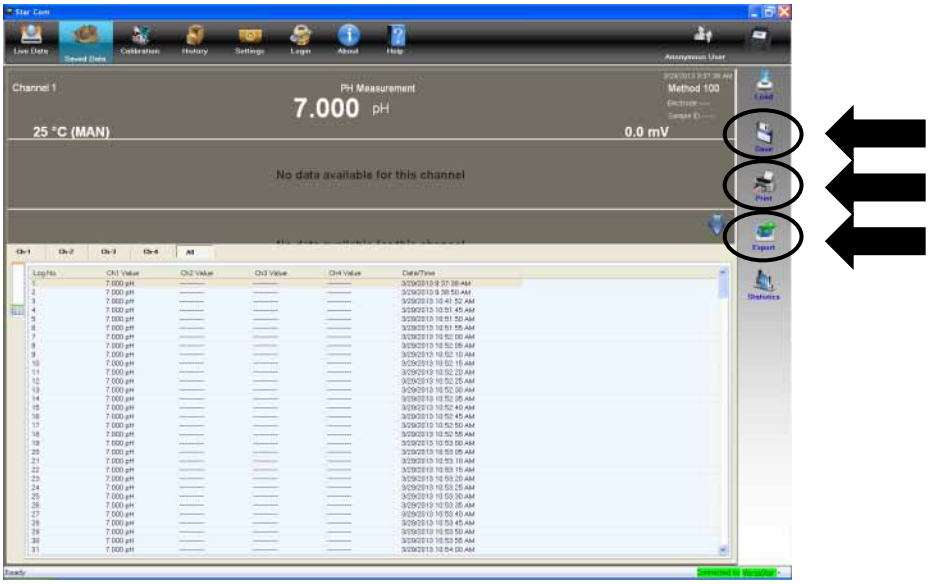


4. If the Load Range option is selected, enter the first data point in the Start Range field and the last data point in the End Range field and press OK.

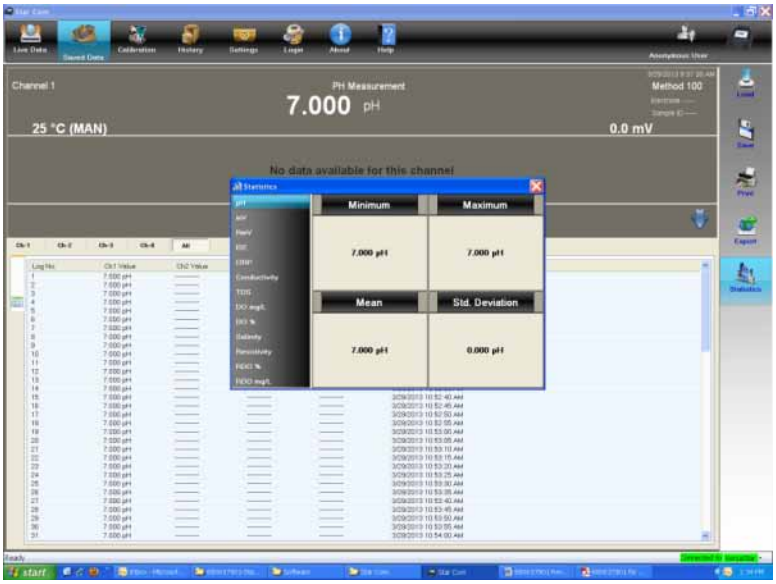


5. Wait while the Star Com program retrieves the measurement data from the meter data log.

6. Press the Save icon to save the data as a session in the History location, press the Print icon to send the data to a printer connected with the computer or press the Export icon to save the data as an Excel (.xls) or Comma-Separated Values (.csv) file on the computer.



7. Statistics (minimum, maximum, mean and standard deviation) can be calculated for a set of common values in the Saved Data location.

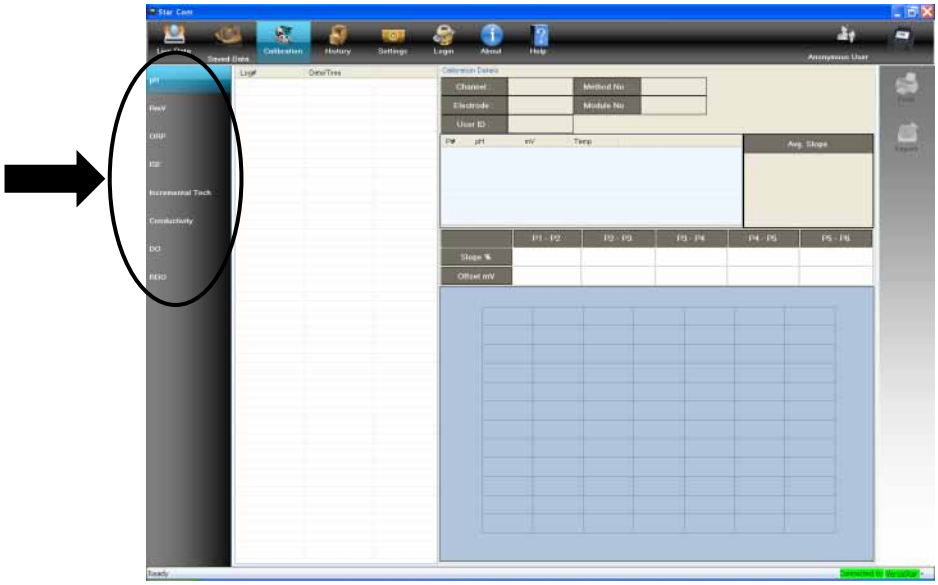


Using the Calibration Function

Use the Calibration function to collect stored calibration data from the meter calibration log.

1. Press the Calibration icon.

2. Wait while the Star Com program retrieves the calibration data from the meter calibration log.
3. Press the parameter tabs to view the history each stored calibration by parameter.



4. Press the Print icon to send the data to a printer connected with the computer or press the Export icon to save the data as an Excel (.xls) or Comma-Separated Values (.csv) file on the computer.

Displaying Incremental Methods

If using a VERSA STAR meter, stored incremental technique data can be collected and displayed in the Calibration location.

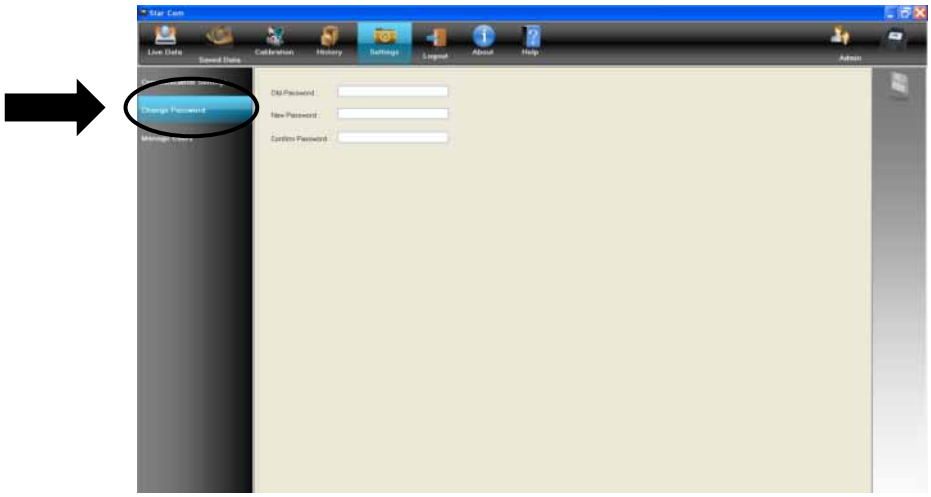
Using the Login/Logout Function

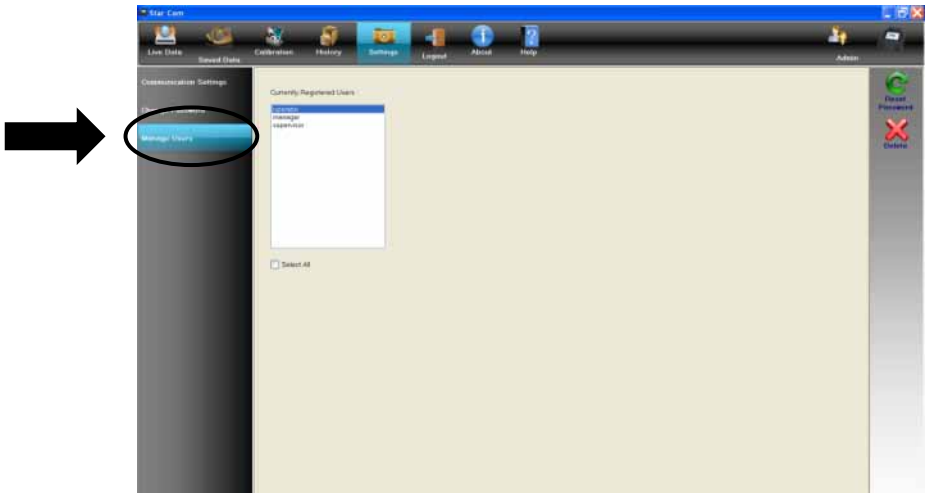
Use the Login / Logout function to create a Star Com program administrator, enter up to 25 user names and passwords and limit access to specific saved Star Com data by user.

When the Star Com program is first loaded, no login name and password is required and the program runs in Anonymous mode.

To create an Administrator, press the Login icon, enter “admin” as the user name and password and press OK.

The administrator has all the rights to reset a user’s password or delete a user.





A maximum of 25 users can be added to the Star Com program. To create a new user for the first time, press the Logout icon if a user is actively logged in, press the Login icon, enter the new user name and password and press OK.

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